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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/896,367	06/28/2001	Ralph James Knotts	80310023/JAS	2225

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EXAMINER

AGUIRRECHEA, JAYDI A

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 04/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/896,367

Applicant(s)

KNOTTS ET AL.

Examiner

Jaydi A. Aguirrechea

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Drawings

1. The drawings were received on 2/20/04. These drawings are accepted.

Claim Rejections - 35 USC § 112

2. The 112 rejection has been withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Bisantz (US 5659216).

With regards to claims 1, 8 and 9, AAPA disclose a stator comprising a plurality of laminations supporting coils, which are sequentially energized to cause rotation of a hub supporting one or more discs for rotation in a plane axially over the stator.

However, it fails to disclose the magnets, shaft, hub and shield.

Bisantz discloses, in Figures 2 and 3, a spindle motor comprising: a shaft supported from a base frame and supporting on the outer diameter thereof; a stator (column 1, lines 18-20), a hub (14) supporting a magnet (12) and back iron (15) radially adjacent the stator coils, the back iron supporting a flux shield (lip 20) extending substantially of the entire width of the magnet and intervening between the magnet and the base, the flux shield being formed of a magnetic material (low carbon steel) to capture any stray magnetic flux from the motor magnet for the purpose of providing a high degree of rigidity and rotational stability to the system.

It would have been obvious to one skilled in the art at the time the invention was made to use the shield disclosed by Bisantz on the spindle motor disclosed by AAPA for the purpose of increasing the stiffness or rigidity of the motor structure.

5. With regards to claims 2, 10 and 15, the shield is made of steel.

6. With regards to claims 3 and 11, the combination of AAPA and Bisantz discloses the claimed invention except for the shield is made of a mu metal. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use mu metal since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. In the instant case, carbon steel is issued and both materials have high magnetic permeability and are used as magnetic shields.

7. With regards to claims 4 and 12, the shield is integrated with the back iron.

8. With regards to claims 5 and 13, the shield is glued to the magnets (Column 3, Lines 63-65).

9. With regards to claims 6 and 14, in figures 2 and 3 is shown the shield extending the entire width of the magnet.

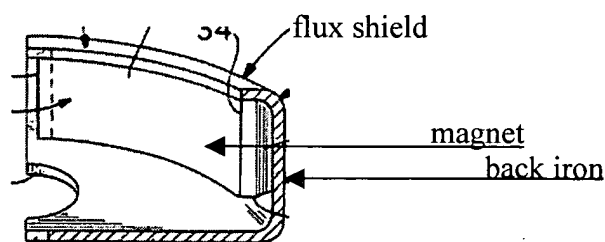
10. With regards to claim 7, the housing defines a well, and the magnets and back iron extend axially from the lower surface of the rotor.

11. With regards to claims 16-18, since the magnet is glued to the shield, there is a space and it's filled with glue.

Response to Arguments

12. Applicant's arguments filed on 2/20/04 have been fully considered but they are not persuasive.

Applicants' argument that Bisantz does not show a magnet affixed to a back iron disposed radially adjacent to the stator coils is not persuasive. As shown below, Bisantz disclose in Figure 3, a magnet affixed to the back iron and radially adjacent to the stator coils (column 1, lines 18-20).



13. In response to applicant's argument that the shield is for the purpose of capturing stray magnetic flux from the magnet, the shield being made of a magnetic material (steel, in the instant case), inherently is going to capture the magnetic flux.

14. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir.

Art Unit: 2834

1992). In this case, the motivation is for the purpose of increasing the stiffness or rigidity of the motor structure, as disclosed in the 103 rejection.

15. In response to applicant's argument that Bisantz does not teach the cup to capture stray magnetic flux from the magnets, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

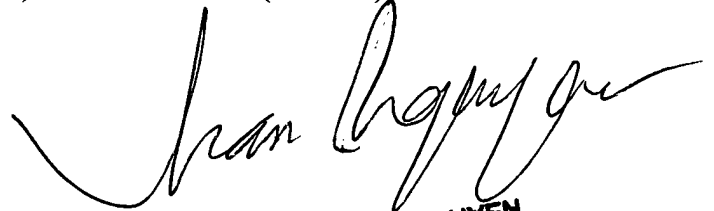
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaydi A. Aguirrechea whose telephone number is 571-272-2018. The examiner can normally be reached on M-Th 9-7.

Art Unit: 2834

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E. Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JAA
4/5/04



TRAN NGUYEN
PRIMARY EXAMINER